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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,741	09/06/2006	Shigeru Tanaka	TIP-06-1177	5793

35811 7590 06/02/2009
IP GROUP OF DLA PIPER US LLP
ONE LIBERTY PLACE
1650 MARKET ST, SUITE 4900
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EXAMINER

NELSON, MICHAEL B

ART UNIT	PAPER NUMBER
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1794

MAIL DATE	DELIVERY MODE
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06/02/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/584,741	Applicant(s) TANAKA ET AL.	
	Examiner MICHAEL B. NELSON	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14, 16-33 and 37-39 is/are pending in the application.
- 4a) Of the above claim(s) _ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14, 16-33 and 37-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 May 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1794

DETAILED ACTION

Response to Amendment

1. Applicant's amendments filed on 05/01/09 have been entered. Claims 1-14, 16-33 and 37-39 are currently under examination on the merits. Claims 15 and 34-36 are cancelled. Applicant's drawings have been entered. The previous 112 2nd paragraph rejections are withdrawn.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

Art Unit: 1794

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-14, 16-33 and 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asakura et al. (JP 03 187742), see English language translation, in view of Sadamitsu et al. (WO 02/066233), see U.S. 2004/0096744 as an English language equivalent.

Regarding claims 1, 2, 3, 8, 16, 37, 38 and 39, Asakura et al. discloses a biaxially oriented thermal transfer recording film (Page 8, last full paragraph and page 10 first full paragraph). The polypropylene containing core layer A (claim 1) of the laminate of Asakura et al. is sandwiched by skin layers, B, and laminated to a substrate with an adhesive layer C (page 13, first full paragraph). The substrate is disclosed as including an image receiving layer which is made up of a coating (Page 28, "Composition of the image-receiving layer"). This image receiving layer is identical to the layer disclosed in the instant specification at [0247] and since Asakura et al. discloses that his invention has high glossiness (Page 14, end of first paragraph), one having ordinary skill would expect the outer surface to exhibit the glossiness as instantly recited. Given that the "B" layer of Asakura et al. (Embodiments 1 and 2 of Table 1 on the last page and "Means of solving the problem" at Page 5) is substantially identical to the B layer composition disclosed at page 98 of the instant specification (i.e. @95% polypropylene and @5% PMP), one having ordinary skill would expect it to exhibit the claimed half crystallization time. The density of the film of Asakura et al. is disclosed as being between 0.75 g/cm³ or less (Page 9, second full paragraph). The cushion rate is disclosed as being greater than 8% (forth paragraph on page 9).

Art Unit: 1794

Asakura et al. does not explicitly disclose a core layer (i.e. "A" layer) which meets the instant limitations; however, Sadamitsu et al. discloses a biaxially oriented porous (i.e. void containing) film which is improved in strength (i.e. breakage resistance) and thickness uniformity (See Abstract) and which can be used in synthetic paper ([0112]). The core layer of Sadamitsu et al. is disclosed as containing a polypropylene base, inter alia a polypropylene homopolymer ([0128]), and B-crystallization nucleators which impart B-crystal activity. The Table 1 at page 20 of Sadamitsu et al. shows that for example A the B-crystal ratio of the core layer is 72% and the porosity (i.e. void ratio) is 57%. The voids created in the film of Sadamitsu et al. are a result of the different crystalline states of polypropylene ([0002]) and are therefore non-nucleus voids in that there is no nucleating particle left in the void after it is stretched. Given that the Sadamitsu et al. core layer uses a homo-polypropylene at the same relative amount to the same nucleating agent ([0195]) as in the instant specification (Example 1, [0256]) the core layer would exhibit the claimed melting point.

The inventions of both Asakura et al. and Sadamitsu et al. are drawn to the field of porous polypropylene films for use in thermal transfer films (i.e. synthetic paper) and therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the core layer of Asakura et al. by using the porous layer of Sadamitsu et al. for the purposes of imparting increased breakage resistance and thickness uniformity.

Modified Asakura et al. does not explicitly disclose the instantly claimed 2% elongation strengths (F2 value) however, one having ordinary skill in the art would have adjusted the thickness of the core and skin layers in order to provide a film with optimum balance of tensile strength and weight basis depending on the particular marketable application. Hence one having

Art Unit: 1794

ordinary skill would have found it obvious to have produced the films of modified Asakura et al. with a variety of tensile strengths, including those instantly claimed.

Regarding claims 4-8, 9-14 and 17-33, modified Asakura et al. discloses all of the limitations as set forth above. Additionally, Asakura et al. discloses that the B skin layers include polypropylene (i.e. a polyolefin) (Embodiments 1 and 2 of Table 1 on the last page). The density of the film of Asakura et al. is disclosed as being between 0.75 g/cm^3 or less (Page 9, second full paragraph). The surface roughness is disclosed as between 0.25 and 0.08 micrometers (Page 10, first full paragraph). Given that the "B" layer of Asakura et al. (Embodiments 1 and 2 of Table 1 on the last page and "Means of solving the problem" at Page 5) is substantially identical to the B layer composition disclosed at page 98 of the instant specification, one having ordinary skill would expect it to exhibit the claimed crystallization temperature and void ratios. The PMP is disclosed as being introduced as pellets (i.e. organic particles) in embodiments 1-5 of Asakura et al. (Page 22). The optical density is disclosed as being greater than 0.7 (Page 9, third full paragraph). Given that Titanium oxide is disclosed (Bottom of Page 12) and given that the film is disclosed as being laminated to paper (Page 12, second and third full paragraphs), one having ordinary skill in the art would expect the whiteness to be within the claimed ranges especially considering the application of the inventions for image receiving. An anchor layer, C, is disclosed as being between the B layer and the substrate layer (i.e. image receiving layer), and comprised of acryl based resins (first full paragraph of page 11).

Regarding the claimed thermal conductivity values, given the substantially similar layers and layer compositions of the film of modified Asakura et al. (i.e. the core layer of Sadamitsu et al. and the skin, adhesive, paper and coating layers of Asakura et al.) as stated above, one having

Art Unit: 1794

ordinary skill in the art would expect the film of the prior art to exhibit these properties absent objective evidence to the contrary.

Response to Arguments

2. Applicant's arguments filed on 05/01/09 are considered moot in light of the new grounds of rejection which were necessitated by applicant's amendments. Arguments which are still deemed to be relevant are addressed below. This action is made final on the basis that applicant's inclusion of the limitations of claim 15 into claim 1 has resulted in the limitations of claim 15 being included with all the other claims which are dependent on claim 1 for the first time.

3. Regarding applicant's arguments directed towards the previous 112 2nd paragraph issues, the examiner has withdrawn these rejections in light of applicant's cited portions of the specification.

4. Regarding applicant's arguments against the combination of the core layer of Sadamitsu et al. with the skin layers of Asakura et al., the examiner does not agree that there would not be a reasonable expectation of success. Firstly, applicant argues that Asakura et al. teaches away from a core layer which does not possess 10-40% PMP. Applicant argues that the core layer of Sadamitsu et al. would not contain PMP with the ranges which are purportedly required by Asakura et al.. This is not the case since Sadamitsu et al. discloses containing PMP within the core resin composition at 10% ([0130]). Hence the core layer of Sadamitsu et al. can contain an amount of PMP in the same ranges as taught by Asakura et al. In any case, this point is moot since Asakura et al. does not teach away from a core layer which does not have PMP (i.e. less than 10% PMP). Applicant cites the portions of the disclosure in which Asakura et al. describes

Art Unit: 1794

the deleterious effects of containing more than 40% PMP (i.e. delamination and film breakage) however these adverse effects are presented for situation in which too much PMP is included in the film, not too little. Applicant argues that the heart of the invention of Asakura et al. is that PMP is included to reduce delamination however the disclosure of Asakura et al. actually shows that PMP can cause delamination. Therefore a film containing no PMP would not exhibit these adverse properties.

5. The only relevant portion of the disclosure of Asakura et al. would be disclosure related to films containing less than 10% PMP. For these films Asakura et al. states that "cushion properties of the resulting film **may** become insufficient" (applicant incorrectly cited the reference by stating that the cushioning properties **will** be insufficient). Since cushioning properties can be affected by multiple variables (i.e. other than the amount of PMP, for example pore size and film thickness) one having ordinary skill in the art would have found it obvious to have increased film cushioning properties in the event that they are made to be "insufficient" by a lack of PMP. The possible reduction in cushioning properties would not prevent one having ordinary skill in the art from expecting success in including a core layer which has less than 10% PMP with the skin layers of Asakura et al.

6. Regarding applicant's arguments against the inclusion of beta crystallization nucleating agents in the prior art, the examiner notes that beta crystallization nucleating agents are required by the instant application (see instant examples). The voids created in both the films of the prior art and the instant invention are a result of the different crystalline states of polypropylene and are therefore non-nucleus voids in that there is no nucleating particle left in the void after it is stretched.

Art Unit: 1794

7. Regarding the cushioning factor, applicant argues that Sadamitsu et al. does not disclose uniform voids or sufficiently small pores and therefore does not teach adequate cushioning factor. The examiner disagrees. Firstly, Sadamitsu et al. does disclose curing the previous deficiencies of the prior art in terms of uniform film properties ([0012]). Secondly, the pore size of Sadamitsu et al. is disclosed as being below 0.1 micrometer ([0031]) which is what applicant cites as a sufficiently small pore size for the instantly claimed cushioning factor. Lastly, Asakura et al. teaches a cushion factor of greater than 8% and therefore one having ordinary skill in the art would find it obvious to adjust the film to achieve the highest cushioning factor possible.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 1794

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL B. NELSON whose telephone number is (571) 270-3877. The examiner can normally be reached on Monday through Thursday 6AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571) 272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R. Sample/
Supervisory Patent Examiner, Art Unit 1794

/MN/
05/26/09